AMENDMENTS TO THE CLAIMS

Listing of Claims

The following listing of claims replaces all prior versions and listings of claims in the application.

1. (Previously presented): A transmission method comprising the steps of:

producing a plurality of finite-length signals of a length Nm

$S_{A,X}=(x_0A, 0\ldots0, x_1A, 0\ldots0, x_2A, 0\ldots0, \ldots, x_{m-1}A, 0\ldots0)$

$S_{B,Y}=(y_0B, 0\ldots0, y_1B, 0\ldots0, y_2B, 0\ldots0, \ldots, y_{m-1}B, 0\ldots0)$

...

using a plurality of data sequences

$A=(a_0a_1\ldots a_{N-1})$, $B=(b_0b_1\ldots b_{N-1})$, ... and

a plurality of coefficient sequences

$X=(x_0x_1\ldots x_{m-1})$, $Y=(y_0y_1\ldots y_{m-1})$, ...;

repeating each finite-length signal of said finite-length signals $S_{A,X}$, $S_{B,Y}$, ... to produce a pseudo periodic signal ..., $S_{A,X}$, $S_{A,X}$, $S_{A,X}$ ..., ..., $S_{B,Y}$, $S_{B,Y}$, $S_{B,Y}$, ..., ...; and

cutting out a part from said pseudo periodic signal to produce a signal of a predetermined length longer than Nm for making said signal a transmission signal.

2. (Previously presented): The transmission method according to claim 1, further comprising the step of adding up a plurality of signals of a predetermined length, cut out from the pseudo periodic signal produced from different finite-length signals, to produce a transmission signal.

3. (Previously presented): The transmission method according to claim 1 or 2 wherein a plurality of transmission signals are produced using different coefficient sequences and in an arbitrary combination of said plurality of transmission signals, a periodic cross-coefficient function of the transmission data of said transmission data sequences is 0 for all shifts.

4. (Previously presented): The transmission method according to claim 1 or 2 wherein a plurality of transmission signals are produced using different coefficient sequences and in an arbitrary combination of said plurality of transmission data sequences, the plurality of transmission signals are transmitted in parallel so that periodic spectrums of the transmission signals have no correlation.

5. (Currently amended): The transmission method according to ~~one of claims 1-4~~ claim 1 or 2 wherein said coefficient sequence is a row vector of a DFT matrix.

6. (Currently amended): A communication method comprising the steps of:

transmitting the transmission signal according to ~~one of claims 1-4~~ claim 1 or 2 ; and

receiving said transmission signal and outputting a data sequence via a matched filter corresponding to said coefficient sequence.

7. (Previously presented): The communication method according to claim 6 wherein

at least one transmission signal selected from said transmission signals is used as a pilot signal for measuring multi-path characteristics, and

the received signal has multi-path characteristics of a transmission path.

8. (Previously presented): The communication method according to claim 7 wherein

a plurality of transmission signals are produced using different coefficient sequences of a spreading sequence and

at least one transmission data sequence selected from said transmission data sequences is used as the pilot signal with other transmission signals used as transmission signals, further comprising the steps of:

finding multi-path characteristics from the reception signal of the pilot signal; and

removing the multi-path characteristics from the reception signal of the transmission signal using the multi-path characteristics, which are found, to produce a data sequence.

9. (Previously presented): A data structure of a transmission signal comprising a signal of a predetermined length produced in accordance with a method comprising the steps of:

producing a plurality of finite-length signals of a length Nm

$S_{A,X}=(x_0A, 0\ldots0, x_1A, 0\ldots0, x_2A, 0\ldots0, \ldots, x_{m-1}A, 0\ldots0)$

$S_{B,Y}=(y_0B, 0\ldots0, y_1B, 0\ldots0, y_2B, 0\ldots0, \ldots, y_{m-1}B, 0\ldots0)$

...

using a plurality of data sequences

$A=(a_0a_1\ldots a_{N-1})$, $B=(b_0b_1\ldots b_{N-1})$, ... and

a plurality of coefficient sequences

$X=(x_0x_1\ldots x_{m-1})$, $Y=(y_0y_1\ldots y_{m-1})$, ...;

repeating each finite-length signal of said finite-length signals $S_{A,X}$, $S_{B,Y}$, ... to produce a pseudo periodic signal ..., $S_{A,X}$, $S_{A,X}$, $S_{A,X}$ ..., ..., $S_{B,Y}$, $S_{B,Y}$, $S_{B,Y}$, ..., ...; and

cutting out a part from said pseudo periodic signal.